

Glossary

Abiotic - non-living components of an environment.

Active channel - as used in ecology, the active channel is the physical environment of the permanently submerged bed, together with the frequently disturbed adjacent substrates. In ephemeral or intermittent streams, it is the zone of the most disturbed substrates. The active channel is usually characterized by having little or no permanent vegetation.

Aggrade - to build up a river bed and flood plain with deposited sediment.

Alevins - hatchling salmon larvae with the egg sack still attached.

Algal blooms - sudden growth of algae in an aquatic ecosystem; naturally due to photosynthetic production exceeding consumption by aquatic herbivores, or induced by nutrient enrichment of water due to pollution; a symptom of eutrophication.

Alienate - to convey or transfer property rights by a specific act rather than by the due course of law.

Allochthonous - derived from outside a system, such as leaves of terrestrial plants that fall into a stream (opposite of autochthonous).

Alluvial fan - a mass of sediment deposited at a sharp decrease in gradient, such as between a mountain range and a plain; the land-bound equivalent of a river delta formation.

Alluvial water table - the level of saturated soil in unconsolidated alluvium in riparian zones.

Alluvial deposits - sand, silt and clay deposited by moving water as it slows down.

Anadromous - (of fish) moving from the sea to fresh water for reproduction.

Anaerobic - (of organisms) occurring, living or growing in the absence of free oxygen (O_2).

Appropriative water rights - legal rights to the use of water resources developed by "beneficial" use. The first appropriator in time may perfect a right as against all subsequent appropriators. California utilizes a complex mixture of appropriative water rights and riparian water rights.

Aquatic biota - organisms spending the major portion of their life cycles submerged in the water.

Armor layer - layer of lag, or coarse particles such as gravel or cobble, on a stream bed, which is highly resistant to erosion (see lag); also, artificial bank protection such as rock riprap.

Assimilative capacity - a measure of a water body's ability to meet standards or provide beneficial uses under increasing loads of individual pollutants.

Autochthonous - created or derived within a system such as organic matter in a stream resulting from photosynthesis by aquatic plants (opposite of allochthonous).

Autotrophic - deriving most of its organic matter energy sources from primary photosynthetic production within a system.

Avifauna - birds.

Bankfull flow - the flow or discharge as used in hydrology and geomorphology, at which the water level begins to exceed the height of the most pronounced banks.

Base flow - sustained summer low river or stream flow, free of overland flows and storm runoff, and derived from natural groundwater sources.

Bedload - larger, heavier particles of sediment, such as sand and gravel, sometimes up to boulder size, that move along the bed by rolling, sliding, and bouncing.

Benthic algae - submerged algae growing on the bottom and other surfaces.

Best Management Practices - techniques in various land use activities to mitigate or prevent harm to or inhibition of natural attributes or processes (e.g., forestry).

Bight (e.g., Southern California b.) - a wide bay formed by a long bend or curve in the shoreline.

Biological diversity ("biodiversity") - variation in living things in a particular area or region, at the level of genes, species, communities, ecosystems or landscapes.

Biological Oxygen Demand (BOD) - the amount of molecular oxygen taken up by microbial decomposition of organic matter.

Biomass - total weight of living matter in a region, habitat or other defined area or volume.

Biotic - pertaining to living organisms.

Bosques - woodlands (Spanish); applied to southwestern mesquite or cottonwood-mesquite woodlands.

Buffer strip - a strip of undisturbed land and vegetation on each side of a stream left to protect it from the effects of adjacent land use or development (e.g., logging).

Channelization - the straightening and smoothing of river channels, primarily for flood control, often accompanied by paving or bank armoring.

Clear-cutting - removal of the entire standing crop of trees from an area.

Climax or Gallery forests - (as used in this report) the later stages in riparian plant succession, dominated by towering trees.

Climaxes - areas where the Native Americans were particularly culturally innovative and were promulgating customs throughout the region (primarily in California).

Cold pool - the colder water at the deepest part of a reservoir.

Community - the assemblage of organisms living in a particular environment or geographic location.

Confined reaches - stream or river segments which have relatively constrained, well-defined channels, with narrow flood plains; often mountainous and steep-gradient.

Cultural eutrophication - nutrient enrichment, rampant algal growth and subsequent oxygen depletion in a body of water caused or accelerated by human activities.

Cumulative watershed effects (CWE's) - erosion of gullies, delivery of fine sediment to stream channels, increased flood peaks and decreased summer base flows.

Debris plain - a jumble of rocks, gravel, soil, plant fragments and other organic matter deposited by fast moving or sudden flood waters, avalanche or landslide, e.g. from hydraulic mining.

Degradation - a lowering of the elevation of streambeds and flood plains by erosional removal of alluvium; may be caused when upstream sources of sediment are blocked as by dams or by excavation of sand or gravels. See incision, scour, aggrade.

Denudation rate - the rate at which the landscape is lowered by erosion.

Detrital - characterized by organisms feeding on and decomposing organic litter.

Dissolved load - the part of the total sediment load carried by a river that is carried in solution.

Diurnally - daily, as in the characteristic rise and fall of temperature or light over a 24-hour period.

Discharge - volume of water flowing past a reference point per unit of time (eg. cubic feet per second, cfs).

Drainage basin - land area drained by a given river or stream; watershed (also catchment).

Drainage network - the system of converging waterways which combine into larger and larger streams, eventually forming rivers.

Drainage divides - topographic high points between adjacent watersheds.

Dredge - a machine that scoops up mud, sand or gravel, usually from beneath a water surface.

Dredging - excavating unconsolidated alluvial deposits from beneath standing water or from saturated soils adjacent to watercourses.

Drift - benthic insects which have become detached, together with terrestrial insects which fall into the water, and detached algae which float downstream in currents, forming an important source of food for aquatic organisms.

Duff layer - the matted, partially decomposed organic surface layer of forest soils.

Dynamic equilibrium - a condition in which the amounts of sediment entering and transported through a river system maintain what appears to be a stable channel and flood plain form.

Ecosystems - systems incorporating physical, chemical and biological organisms and processes, and the close interactions between and among them.

Ecotones - narrow and fairly sharply defined transition zones between two or more different vegetation types or environments.

Effluent - water or solution which drains out, e.g. complex fluid waste material such as sewage or industrial refuse that is released into the environment.

Emigration - migration away from a place; e.g. juvenile salmon migrating out to sea from fresh water.

Eminent domain - a right of a government, as a representative of the people and in case of necessity, to take and control private property for public use; subject to the requirements of the constitution.

Endemics - species or other taxonomic group native and restricted to a region.

Enjoin - to require a person or entity, by injunction, to perform or to abstain or desist from some act or acts.

Ephemeral - rivers or streams that flow only a short time (days or weeks) in direct response to rain storms.

Equilibrium profile - the grade or slope of the reach of a river where a balance of erosion and deposition over many years is maintained. A dynamic, not a static balance is the usual case; see incision, degradation, dynamic equilibrium.

Escapement - the incoming river run portion of a salmonid population which has escaped ocean harvest or other mortality.

Estuaries - usually tidal, semi-enclosed coastal bodies of water connected to the sea, where fresh water derived from streams draining the land is mixed with seawater.

Fee interest - part of the "bundle of rights" which constitute real property ownership; the most fundamental interest in property available under American law; generally the right to possess and control property, subject to easements and licenses, and subject to the police and eminent domain powers of government.

Fingerlings - young fish one to three inches long.

Fish ladders - an ascending series of pools so arranged as to permit fish to leap or swim upward from level to level and thus bypass dams and waterfalls.

Fish screens - Screens installed in a waterway or intake pipe to prevent passage of fish.

Flashy - a characteristic of watersheds having high runoff rates, due to relative imperviousness; produces storm discharges with pronounced peaks over a short time interval.

Flood plain - the entire landscape subject to river geomorphic and hydrologic processes; in particular the frequently flooded, more terrestrial zone of unconsolidated river-borne sediment above and equal to the bankfull channel or the flat valley adjacent to the bankfull channel.

Fluvial - pertaining to, or produced by, stream action.

Fry - young fish about an inch long, just emerged from their gravel beds, their egg sacks having been absorbed.

Fyke traps - a fish net in the form of a long bag reinforced with hoops.

Gene pool - the collection of genes, or the amount of genetic information, in all the reproductive members of an interbreeding population.

Geomorphology - the landscape and land-forming processes.

Gill nets - a net set upright in the water to catch fish by entangling their gills in its meshes.

Gravel bar skimming - method of aggregate mining in stream and river channels which scrapes materials off large areas in layers.

Groundwater overdraft - removal of groundwater by pumps and wells more rapidly over time than it is naturally replenished; groundwater "mining".

Habitat - the particular living place which provides an environment suitable for survival of an organism, a species or a community.

Hearths - areas where the Native Americans were particularly culturally innovative and were promulgating customs throughout the region; equivalent to climaxes.

Heterotrophic - dependent upon complex organic material input as its main or sole source of carbon, as opposed to depending upon CO₂ from the air captured in photosynthesis.

Humic acids - mixture of dark brown soil organic substances dissolved in water.

Hungry water - clear water released from an impoundment into the river channel possessing "excess" energy which is expended on erosion, incision and increased movement of bedload.

Hydraulic mining - form of mining that directs a jet of highly pressurized water onto an exposed placer deposit and runs the sediment through sluices to remove the gold or other heavy metals.

Hydrographs - graphic representation of river flows over time, produced from instrument data at water gauging stations.

Hydrologic basins - large geographic areas drained by one or more similar river systems defined for management and study; may contain more than one watershed.

Hydrological habitat modification - modification of an aquatic or riparian habitat by water insufficiency, excess or energy.

Hydrology - the flow, occurrence and circulation of water in the environment.

Ichthyological provinces - geographical region defined by fish species distribution.

Incision - extensive degradation or down-cutting of a stream or river bed.

Indicator - a plant or animal species sensitive to one or more environmental factors, the presence of which indicates a particular environmental condition.

Intermittent - streams or rivers which flow only part of a year.

Ionize - the production of positively or negatively charged substances (ions) as by dissolving.

Lag - deposit of gravel or cobbles remaining in place after finer particles have been eroded away (see armor layer).

Leachate - substances in suspension or solution removed from rock, soil or organic matter by water.

Lianas - wiry or woody free-hanging, climbing plants.

Low flow channel - the river channel containing the lowest or the residual flow, reached in any given year; also called the wetted channel.

Macrophytes - large plants.

Mass wasting - soil mass movement or landslide.

Meander loops - sinuous, regular river channel formed in lower, flatter reaches of a river by erosion on one side and deposition on the other.

Mesic - an environment that is neither extremely wet (hydric) nor extremely dry (xeric).

Metabolic - pertaining to internal physical and chemical processes of living organisms which produce, maintain, and break down substances, and the release of energy from food for these life processes.

Midden - a deposit marking a former aboriginal habitation site and containing materials such as discarded artifacts, bone and shell, food refuse, human remains, structural remnants, etc.

Motile - exhibiting, or capable of movement.

Natural levees - zones of non-man-made higher ground resulting from sediment deposition adjacent to the river channel.

Niche - a species' role or position in the variety of interactions and processes within an ecosystem.

Nonpoint Source (NPS) pollution - pollution from sources not defined as discrete points: e.g. runoff from farmland, logged areas, or urban areas.

Ocean Trollers - commercial salmon fishing in the ocean.

Out-migration flows - releases of water to assist young anadromous fish in migrating downstream from their spawning beds.

Oxbow - section of a former meander loop that no longer carries the main river flow, cut off by a lateral channel shift.

Passerine species - largest order of birds, which includes smaller perching song birds such as flycatchers, warblers, and swallows.

PCBs - polychlorinated biphenyls; a family of industrial compounds noted primarily as environmental pollutants that accumulate in animal

tissue, with resultant pathogenic (disease-causing) or teratogenic (embryo or fetus malformation-causing) effects.

Penstocks - steep gradient pipes or channels for gravity acceleration of water for driving electric generators in hydroelectric plants.

Periphyton - benthic algae and organisms which feed upon it.

Phreatophytes - plants needing to have their roots at or near the water table.

Phylogenetic - evolutionary.

Phytoplankton - microscopic plants which are free-floating in the water; important primary producers in many aquatic systems.

Pit mining - excavation of large pits for extraction of aggregates or ore.

Point source pollution - pollution emanating from a defined point, such as a pipe, ditch, tunnel, well or floating craft.

Point bars - sediment bars deposited by water slowing along the concave (inside) bank of a meandering stream.

Pollutants - substances that enter the environment or become concentrated within it, and that have or may have a detrimental biological effect, whether by natural causes or resulting from human activity.

Primary Productivity - production of organic matter from inorganic substances by plant photosynthesis (or less commonly by chemosynthesis).

Public domain - all unsold federal lands within the state which are not withdrawn or reserved for some other federal purpose.

Public trustee - a public agency to whom property is legally committed, to be administered for the benefit of the public (or: one occupying a position of trust and performing functions comparable to those of a trustee).

Races - in salmonids, distinct runs within a population which migrate at different times.

Reaches - sections of a stream or river between two specified points or possessing some common characteristic(s).

Reclamation - "reclaiming" land from a condition unsuitable for certain human uses by civil engineering works (levee building, draining wet areas, etc.).

Recreational river - designated under the Wild and Scenic Rivers Act as accessible by road with some development allowed. This designation prohibits new dams and major diversions and certain other human uses.

Redds - fish spawning nest or group of nests dug in a gravel bed.

Replenishment rate - the rate at which a stream, in equilibrium condition, moves its bedload, particularly of gravel, downstream.

Revetment - a facing, as with cement or rock, to support an embankment and prevent its erosion; see riprap.

Rill - a small (few inches deep) watercourse.

Riparian - pertaining to the environment of river and stream banks and flood plains (sometimes term is used more broadly for wet, mostly terrestrial, environment around any fresh water body (including seeps or springs).

Riprap - rock revetment placed to armor banks, usually at a given slope, e.g. 2:1.

River terrace deposits - aggregate deposits in the flood plain.

Riverine zone - the zone of habitats in the active channel of a stream or river, essentially ending at the riparian zone; includes the permanently submerged bed and adjacent exposed sand and gravel bars.

Riverine-riparian ecosystems - ecosystems encompassing both instream and adjacent riparian zones, especially their biological components.

Salinity - the concentration of dissolved solids in ionic form in water.

Scenic river - designated under the Wild and Scenic Rivers Act as essentially wild, but occasionally accessible by road. This designation prohibits new dams and major diversions and certain other human uses.

Scour - localized erosion by flowing water.

Seawater intrusion - penetration of saline water into rivers, sloughs or groundwater aquifers normally containing fresh water flowing seaward, due to water diversion or low flows, or groundwater overdraft up-flow from the normal zone of salt-fresh water contact.

Sediment yield - the amount of sediment transported from a river basin which can be used to compute the average rate at which the basin landscape is lowered by erosion.

Seine - a large fishing net with floats along the top edge and weights along the bottom.

Shaded Riverine Aquatic Cover (SRA) - the habitat formed at the interface of woody riparian vegetation and water.

Silviculture - management of forests, including harvest and regeneration.

Skid roads (skid trails) - access roads in a logging operation to permit removal of cut logs to a transfer area.

Smolts - juvenile salmonids one or more years old which have undergone physical changes to cope with a marine environment; the seaward migrant stage.

Sovereign lands - the lands and rights in lands held by the state as sovereign, in trust for the benefit of its people.

Spawning escapement - the portion of the total river run salmon population which has escaped river fishing and is available for reproduction.

Stocks - in salmonids, identification of subsets of a species or subspecies by taxonomic grouping, river or stream system, and migratory race. Pacific salmon species are considered to be made up of distinctive stocks.

Striped Bass Index - a measure of young bass present in the Bay-Delta estuary, used as an indicator.

Substrate - any object or material upon which an organism grows or is attached; the underlying layer or substance.

Succession (plant) - change in species composition of vegetation over time, due to environmental change and the intrinsic properties of the plants themselves.

Suction dredge - a floating dredge using a pump with a flexible hose four to ten inches in diameter guided by an operator in the water to suck up sediments from the streambed likely to contain gold.

Surfactant - a surface-active substance.

Suspended load - clays, silts, and sometimes sand that are held in suspension by turbulence in river water.

Swales - low, usually damp, areas of land.

Tailings - portions of washed or milled ore regarded as too poor to be treated further; often left as tailings piles after mining.

Taxonomy - the classification of living organisms into different species and other levels of phylogenetic (evolutionary) groups (e.g., phylum, order, family, genus, species).

Tectonic - brought about by the formation or movement of the earth's crust.

Terrace - in common usage (especially California) the flood plain of a river or stream; in some technical usages, an abandoned flood plain now higher than the current flood plain.

Terrace mining - excavating alluvial deposits from alongside a river, in the river flood plain terrace, usually by pit mining.

Trace elements - essential chemical elements required in small or minute amounts for successful growth and development of an organism, usually the metals.

Transpiration - evaporation of water from plants, principally from leaves.

Trophic - relating to feeding relationships between living things.

Turbidity - relative opaqueness or cloudiness of water due to suspended or dissolved particles, blocking light penetration.

Unconfined reaches - low-gradient, meandering segments of rivers in broad valley floors with wide flood plain and riparian zones.

Underflow - the shallow groundwater under the river channel recharged by the river; subject to extraction as with non-riverine groundwater.

Water quality - the chemical, physical and biological properties of water as they affect the uses of it by man and nature.

Watershed - the land area drained by a given river; synonymous with drainage basin (also catchment).

Weir - a barrier built in a stream to divert fish or water, or to raise water level; or a notch or depression in a dam through which the flow of water is measured or regulated.

Wild river - designated as undeveloped and accessible only by trail under Public Resources code section 5093.54—the Wild and Scenic Rivers Act. This designation prohibits new dams and major diversions.